

## CLAIMS

1. An apparatus for determining optimum prices of products for sale, comprising:
  - a scenario/results processor, configured to enable a user to prescribe an optimization scenario, and configured to present the optimum prices to said user, wherein the optimum prices are determined by execution of said optimization scenario;
  - a demand engine, coupled to said scenario/results processor, configured to model relationships between potential prices of the products and market demand for the products;
  - an activity based cost engine, coupled to said demand engine, configured to estimate demand chain costs for the products based upon said market demand; and
  - a price optimization engine, coupled to said demand engine and said activity based cost engine, configured to employ said market demand and said demand chain costs to determine the optimum prices, wherein the optimum prices are a subset of said potential prices, and wherein the optimum prices maximize a merchandising performance figure of merit according to said optimization scenario.

2. The apparatus as recited in claim 1, wherein said scenario/results processor comprises:  
an input/output processor, configured to acquire data corresponding to said optimization scenario from said user, and configured to distribute optimization results to said user; and  
a scenario controller, coupled to said input/output processor, configured to control the acquisition of said data and the distribution of said optimization results in accordance with a price optimization procedure.
3. The apparatus as recited in claim 2, wherein said data is acquired from said user over the Internet via a packet-switched protocol.
4. The apparatus as recited in claim 3, wherein said packet-switched protocol comprises TCP/IP protocol.
5. The apparatus as recited in claim 2, wherein said data is interactively provided by and said optimization results are interactively distributed to said user.

6. The apparatus as recited in claim 5, wherein said data is acquired from a source electronic file and said optimization results are distributed to a destination electronic file, said electronic files being designated by said user.
7. The apparatus as recited in claim 2, wherein said input/output processor comprises:
  - a template controller, configured to provide first price optimization templates and second price optimization templates, wherein said price optimization templates are presented to said user to allow for prescription of said optimization scenario, and for distribution of said optimization results; and
  - a command interpreter; configured to extract commands from said first price optimization templates executed by said user, and configured to populate said second price optimization templates according to result data provided for presentation to said user.
8. The apparatus as recited in claim 7, wherein said first and second price optimization templates are provided according to hypertext markup language (HTML).

9. The apparatus as recited in claim 7, wherein said first and second price optimization templates are provided according to extensible markup language (XML).
10. The apparatus as recited in claim 7, wherein said first and second price optimization templates are provided as Java applets.
11. The apparatus as recited in claim 7, wherein said first price optimization templates comprise:
  - a plurality of new scenario templates, configured to
    - enable said user to prescribe scenario parameters
    - corresponding to said optimization scenario.
12. The apparatus as recited in claim 11, wherein said plurality of new scenario templates comprises:
  - a category template, for specifying a product category for price optimization, said product category comprising:
    - a plurality of demand groups, each of said
      - plurality of demand groups configured to
      - categorize a set of highly correlated
      - products, wherein said highly correlated
      - products are normally substitute products,
      - but may also be complementary products.

13. The apparatus as recited in claim 12, wherein said plurality of new scenario templates further comprises:  
a products template, for specifying the products for sale, wherein the products for sale may span more than one of said plurality of demand groups.
14. The apparatus as recited in claim 12, wherein said plurality of new scenario templates further comprises:  
a locations template, for specifying a plurality of store groups for which the optimum prices are to be determined, wherein, when determining the optimum prices, the apparatus employs portions of said data that correspond to said plurality of store groups.
15. The apparatus as recited in claim 12, wherein said plurality of new scenario templates further comprises:  
a time horizon template, for specifying a time period for which the optimum prices are to be determined.
16. The apparatus as recited in claim 12, wherein said plurality of new scenario templates further comprises:  
an at-large rules template, for specifying rules to govern determination of the optimum prices, said rules comprising:  
maximum allowable price swing for each of the products for sale; and

maximum allowable swing for average price of each demand group within said plurality of demand groups.

17. The apparatus as recited in claim 12, wherein said plurality of new scenario templates further comprises: a strategy template, for specifying said merchandising performance figure of merit, and for specifying limits for changes in sales volume.
18. The apparatus as recited in claim 17, wherein options for specification of said merchandising performance figure of merit comprise net profit, said sales volume, and revenue.
19. The apparatus as recited in claim 7, wherein said second price optimization templates comprise: a price optimization results template, for providing said user with said result data corresponding to said optimization scenario.
20. The apparatus as recited in claim 19, wherein said result data comprises optimized values and percent change values for merchandising factors, wherein said merchandising factors comprise one or more of the following: volume, revenue, product cost, gross margin, and net profit.

21. The apparatus as recited in claim 20, wherein said result data is presented graphically.
22. A method for optimizing the prices of products for sale, comprising:
  - utilizing a computer-based scenario/results processor within an optimization server to present a sequence of data entry templates to a user, whereby the user specifies an optimization scenario;
  - within the optimization server, modeling the relationship between potential prices of the products and market demand for the products;
  - within the optimization server, estimating demand chain costs for the products according to the modeled market demand;
  - within the optimization server, employing the market demand and the demand chain costs to determine optimum prices, wherein the optimum prices maximize a merchandising performance figure of merit according to the optimization scenario; and
  - generating a plurality of optimization results templates and providing these templates to the user, wherein the optimum prices are presented.

23. The method as recited in claim 22, wherein said utilizing comprises:  
acquiring data corresponding to the optimization scenario from the user; and  
formatting the data into a format suitable for performing a price optimization according to the optimization scenario.
24. The method as recited in claim 23, wherein said acquiring comprises:  
obtaining the data from the user over a data network that employs a packet-switched protocol.
25. The method as recited in claim 24, wherein said acquiring further comprises:  
employing TCP/IP protocol to obtain the data over the Internet.
26. The method as recited in claim 23, wherein the data is interactively provided by the user.
27. The method as recited in claim 23, wherein the data is acquired from a source electronic file that is designated by the user.
28. The method as recited in claim 22, wherein the data entry templates and the optimization results templates are generated in hypertext markup language (HTML).



29. The method as recited in claim 22, wherein the data entry templates and the optimization results templates are generated in extensible markup language (XML).
30. The method as recited in claim 22, wherein the data entry templates and the optimization results templates are generated as Java applets.
31. The method as recited in claim 22, wherein said utilizing comprises:
- first providing a category template, for specifying a product category for price optimization, wherein the product category comprises a plurality of demand groups;
- second providing a products template, for specifying the products for sale for which the optimum prices are to be determined, wherein the products for sale may span more than one of the plurality of demand groups; and
- third providing a time horizon template, for prescribing a time period for which the optimum prices are to be determined.
32. The method as recited in claim 31, wherein said utilizing further comprises:

fourth providing a locations template, for prescribing a plurality of store groups for which the optimum prices are to be determined, wherein said prescribing directs said employing to utilize data corresponding to the plurality of said store groups when determining the optimum prices; and fifth providing an at-large rules template, for specifying rules to govern determination of the optimum prices, wherein the rules specify maximum allowable price swing for each of the products for sale, and maximum allowable swing for the average price of each demand group within the plurality of demand groups.

33. The method as recited in claim 22, wherein said utilizing comprises:  
providing a strategy template, for specifying the merchandising performance figure of merit, and for prescribing limits for changes in sales volume.
34. The method as recited in claim 22, wherein options for specifying the merchandising performance figure of merit comprise net profit, sales volume, and revenue.
35. The method as recited in claim 22, wherein said generating comprises:

providing a price optimization results template, for  
supplying the user with scenario results  
corresponding to the optimization scenario,  
wherein the scenario results include optimized  
values and percent change values for merchandising  
factors, the merchandising factors including one  
or more of the following: volume, revenue, product  
cost, gross margin, and net profit.

36. A method for generating optimized product prices, the  
optimized product prices corresponding to a set of  
products selected from within a product category, the  
method comprising:  
within a centralized data base, storing product  
attribute and sales history data for a plurality  
of stores, wherein the product attribute and sales  
history data corresponds to the set of products;  
employing a web server to provide a user computer with  
a plurality of scenario/result web pages, the  
plurality of scenario/result web pages enabling a  
user to prescribe the product attribute and sales  
history data for said storing, and to specify  
rules and constraints for generating the optimized  
product prices, wherein the user computer executes  
a thin web client to access the scenario/result  
web pages; and

determining the optimized product prices to maximize either net profit, revenue, or volume, wherein said determining uses both modeled market demand and estimated demand chain costs corresponding to the set of products.

37. The method as recited in claim 36, wherein said employing comprises:  
providing the scenario/result web pages over the Internet via a packet-switched protocol.
38. The method as recited in claim 37, wherein the scenario/result web pages are provided in hypertext markup language (HTML).
39. The method as recited in claim 37, wherein the scenario/result web pages are provided as Java applets.